WE CLAIM:

1. A process for preparing a fiber batt from blow spun fibers comprising:
   a) heating a spinnable substance to a temperature sufficient to allow the spinnable substance to flow;
   b) forming at least one fiber by passing the spinnable substance into a spinning apparatus and through at least one capillary located within the spinning apparatus, wherein said at least one fiber has an initial velocity;
   c) contacting said at least one fiber with at least one flowing stream of gas and passing said at least one fiber into a diffuser;
   d) contacting said fiber with at least one additional flowing stream of gas to place said fiber under tension, wherein the velocity of said at least one additional flowing stream of gas is greater than said initial velocity of the fiber;
   e) dissipating said at least one additional flowing stream of gas thereby reducing the velocity of the fiber to a final velocity;
   f) passing said fiber out of said diffuser at said final velocity; and,
   g) collecting said at least one fiber to form a fiber batt.

2. The process of claim 1 further comprising the step of passing said at least one fiber and said additional flowing stream of gas into a venturi.

3. The process of claim 1 which comprises controlling the rate of dissipating said additional stream of gas, thereby controlling the final velocity of the fiber.

4. The process of claim 3 wherein the rate of dissipation of said additional stream of gas is increased to effectuate an increase in the volumetric density of the fiber batt.

5. The process of claim 3 wherein said initial velocity of the fiber as it exits said spinning apparatus is reduced to said final velocity when it exits the diffuser and wherein the ratio of said initial velocity to said final velocity is up to 50:1.

6. The process of claim 1, wherein said fiber is spun from a carbonaceous pitch.

7. The process of claim 1, wherein said fiber is spun from a solvated mesophase pitch.

8. A process for controlling the areal density (g/m^2) and volumetric density (g/m^3) of a fiber batt produced from a blow spinning apparatus comprising:
   a) imparting an initial speed (m/sec) to the fibers produced by the blow spinning apparatus as said fibers exit the blow spinning apparatus;

b) varying the speed at which a fiber collecting surface is moved under the blow spinning apparatus; and

c) controlling the amount by which the initial speed of the fibers is reduced after said fibers leave the blow spinning apparatus and before said fibers reach said fiber collecting surface.

9. The process of claim 8 wherein step c) comprises contacting the fibers with a flowing stream of gas moving in an opposing direction to the fibers.

10. An apparatus for forming a fiber batt from blow spun fibers comprising:

a) a blow spinning die containing at least one capillary having a first opening for receiving a spinnable substance and a second opening for passing said substance out of said at least one capillary as a fiber and a means for directing a primary stream of gas onto the exiting fiber;

b) a venturi positioned downstream of said blow spinning die, said venturi containing a passage therethrough, said passage having first and second open ends, wherein the first open end is positioned to receive a fiber as it exits the blow spinning die;

c) a diffuser located downstream of the venturi, said diffuser having a first open end positioned downstream of the second open end of said passage through the venturi and a second open end to allow said fiber to exit said diffuser, wherein said diffuser comprises one or more air exhaust ports that create in the diffuser an airflow having a direction against the direction of flow of the fiber.

11. The apparatus of claim 10, further comprising a means for directing a secondary stream of gas on the fiber before it enters said venturi.

12. The apparatus of claim10, wherein the venturi and diffuser have opposing walls centered about an axis drawn vertically through the center of the venturi.

13. The apparatus of claim 12, wherein the distance between said axis and the opposing walls of the second open end of the venturi is greater than the distance between the axis and the opposing walls of the first open end of the venturi.

14. The apparatus of claim 12, wherein the distance between said axis and the opposing walls of the second open end of the diffuser is greater than the distance between the axis and the opposing walls of the first open end of the diffuser.

15. The apparatus of claim 14, wherein the diffuser comprises an upper portion and a lower portion.

16. The apparatus of claim 15, wherein at least a portion of the opposing walls of the upper portion of the diffuser curve in an outward direction relative to the axis.

17. The apparatus of claim 15, wherein at least a portion of the opposing walls of the lower portion of the diffuser curve in an outward direction relative to the axis.

18. The apparatus of claim 10 additionally comprising exhaust ports located within said diffuser.

19. The apparatus of claim 18, wherein the exhaust ports comprise one or more openings in the opposing walls of the lower portion of said diffuser.

20. The apparatus of claim 19, wherein the exhaust ports comprise perforated plates.

21. The apparatus of claim 18 additionally comprising a means for controlling the quantity of air exhausted from said diffuser.

22. The apparatus of claim 10 additionally comprising a surface for collecting fibers.

23. The apparatus of claim 22 additionally comprising a means for exhausting air beneath said collecting surface.

24. The apparatus of claim 10 wherein said venturi and said diffuser are contiguous.

25. The apparatus of claim 10, wherein the distance between the second opening of said capillary and the first open end of said venturi is from about 0.25 inches (0.635 cm) to about 100 inches (254 cm).

26. The apparatus of claim 25, wherein the distance between the second opening of said at least one capillary and the first open end of said venturi is from about 2 inches (5.08 cm) to about 4 inches (10.16 cm).

27. The apparatus of claim 11, wherein the venturi, the diffuser, and said means for directing a secondary stream of gas on said at least one fiber before it enters the venturi are enclosed by a housing.

28. The apparatus of claim 27 wherein said housing comprises an upward extension to provide an enclosed environment around the passage between the second opening of said at least one capillary and the first open end of the passage through said venturi.